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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,527

09/29/2003

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EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

11/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,527	Applicant(s) ADACHI ET AL.	
	Examiner Shawn S. An	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1, 2, 5-14, 25 and 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-38 is/are allowed.
- 6) ☒ Claim(s) 3, 4, 15-24, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. As per Applicant's instructions as filed on 8/30/07, claims 1-12 have been canceled, claims 3, 15, 19, and 27-28 have been amended, and claims 29-38 have been newly added.

Response to Remarks

2. Applicant's remarks with respect to currently pending claims (with the exception of newly added claims 29-38) have been considered but are moot in view of the new ground(s) of rejection based on Applicant's submission of IDS as filed on 7/25/07.

Claim Objections

3. Claim 16 is objected to because of the following informalities: claim 16 limitation is substantially the same as the amended feature of claim 15. Therefore, claim 16 should be canceled.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5 Claims 4, 20-21, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wiegand (DRAFT ISO/IEC 14496-10: 2002 (E)).

Regarding claims 4, 20-21, and 23, Wiegand discloses a video decoding apparatus/method comprising:

input means for effecting input of image data containing encoded data of a frame encoded by a predetermined method, a decoding time ($t_o, dpb(n)$) of the frame, and a maximum delay time ($dpb_output_delay(n)$)(applied to each picture/frame), decoding means for decoding the encoded data to generate a regenerated image, and image output time calculating means for calculating an output time for display of the frame, based on the decoding time and the maximum delay time (page 210, C.2.2; page 223, D.2.2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22, 24, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable Wiegand (DRAFT ISO/IEC 14496-10: 2002 (E)).

Regarding claim 22, Wiegand discloses the maximum delay time being applied to each picture/frame as discussed above.

Therefore, it would have been obvious for one of skill in the art to realize that the maximum delay time being applied to entire encoded data, since a plurality of maximum delay time(s) being applied to pictures/frames at the end of the encoding segment would indicate the maximum delay time being applied to entire encoded data.

Regarding claim 24, Wiegand teaches picture decoding and output comprising calculating the maximum delay time ($dpb_output_delay(n)$) as a time difference

between a decoding time ($t_{o,dpb}(n)$) of a frame without reversal of orders of decoding times and output times with respect to any other frame, and a decoded image output time ($t_r(n)$) correlated with the frame in order to compensate for decoding delay (page 210, **C.2.2**; page 223, **D.2.2**).

Therefore, it would have been obvious for one of skill in the art to realize optionally entering the maximum delay time as information to be applied to a frame for which the maximum delay time is transmitted and to each temporally subsequent frame after said frame in order to compensate for decoding delay.

Regarding claims 27-28, all of the claimed features have been discussed/met with respect to claims 3 and 20, with the exception of a computer readable medium performing the method. However, the Examiner takes official notice that a software aspect of the application (in place of the hardware) is well known in the art.

Therefore, it would have been obvious for one of skill in the art to implement the computer readable medium encoded with computer executable instructions to perform the method, thereby saving significant operating costs associated with the hardware.

8. Claims 3, 15-16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chimoto et al (5,838,383) in view of Wiegand (DRAFT ISO/IEC 14496-10: 2002 (E)).

Regarding claims 3, 15-16, and 19, Chimoto et al discloses a video decoding apparatus/method of implementing interframe prediction (Fig. 12, 461, 463) between a frame and another frame, said video decoding apparatus/method comprising:

effecting input (from 460) of a delay time (one-frame period) to the backward predictor (461).

Chimoto does not particularly disclose the maximum delay time being defined as a time difference between a decoding time of a frame without reversal of orders of decoding times and output times with respect to any other frame, and a decoded image output time correlated with the frame.

However, Wiegand teaches picture decoding and output comprising calculating the maximum delay time ($\text{dpb_output_delay}(n)$) as a time difference between a decoding time ($\text{to_dpb}(n)$) of a frame without reversal of orders of decoding times and output times with respect to any other frame, and a decoded image output time ($\text{tr}(n)$) correlated with the frame in order to compensate for decoding delay (page 210, **C.2.2**; page 223, **D.2.2**).

Therefore, it would have been considered obvious to one of skill in the relevant art employing a video decoding method as taught by Chimoto et al to realize effecting input of a maximum delay time that can be made/incurred by backward prediction, and optionally enter the maximum delay time as information to be applied to a frame for which the maximum delay time is transmitted and to each temporally subsequent frame after said frame, and further incorporate Wiegand's teaching as above in order to compensate for decoding delay.

9. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chimoto et al and Wiegand as applied to claim 15 above, and further in view of Liu et al (6,934,335 B2).

Regarding claims 17-18, Chimoto et al and Wiegand does not seem to particularly disclose the claimed limitations.

However, Liu et al teaches an encoder delaying the encoding of a new I frame to frame 1308, the next P frame (Fig. 13; col. 11, lines 52-57).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a video decoding method as taught by Chimoto et al to incorporate Liu et al's teaching as above so that a maximum delay time is entered as information to be applied to each corresponding frame (comprises a plurality of encoded data) so as to synchronize a decoding time with the decoder.

Allowable Subject Matter

10. Claims 29-38 are allowed.

11. **Claims 29 and 34** recite a novel features.

The prior art of record fails to anticipate or make obvious the novel features (*emphasis added on the claim limitation "performing an inter prediction operation ..., in accordance with the decoding time information"*) as specified in claims 29 and 34.

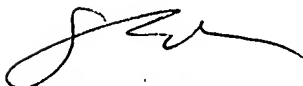
Accordingly, if rejected claims are canceled, the Application would be placed in condition for allowance.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Shawn S An whose telephone number is 571-272-7324.

13. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SHAWN AN
PRIMARY EXAMINER

11/13/07